

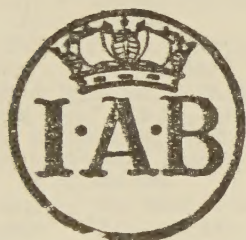
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# HELMINTHOLOGICAL ABSTRACTS

*incorporating*  
BIBLIOGRAPHY OF HELMINTHOLOGY  
For the Year 1937.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY  
Winches Farm  
Hatfield Road  
St. Albans · Eng.

June, 1937

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# HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1937.

Vol. VI, Part I.

## 1—American Journal of Hygiene.

- a. SHELDON, A. J., 1937.—“Some experimental studies on *Strongyloides ratti*.” 25 (1), 39-52.
- b. SHELDON, A. J., 1937.—“Studies on active acquired resistance, natural and artificial, in the rat to infection with *Strongyloides ratti*.” 25 (1), 53-65.
- c. FOSTER, A. O., 1937.—“A relationship in equines between age of host and number of strongylid parasites.” 25 (1), 66-75.
- d. OTTO, G. F. & JANNEY, jr., J. H., 1937.—“A study of trichinosis in a Maryland family.” 25 (1), 76-85.
- e. MAGATH, T. B., 1937.—“Hydatid (*Echinococcus*) disease in Canada and the United States.” 25 (1), 107-134.
- f. BIESTER, H. E. & EVELETH, D. F., 1937.—“Blood and tissue studies in experimental ascariasis.” 25 (1), 135-140.
- g. LANDSBERG, J. W. & FOSTER, A. O., 1937.—“The white cell picture in hookworm disease of dogs.” 25 (1), 141-149.
- h. LEATHERS, W. S. & KELLER, A. E., 1937.—“The prevalence and distribution of *Ascaris lumbricoides*, *Trichuris trichiura* and *Hymenolepis nana* in South Carolina.” 25 (2), 292-302.
- i. BARLOW, C. H., 1937.—“The value of canal clearance in the control of schistosomiasis in Egypt.” 25 (2), 327-348.
- j. SCHEIFLEY, C. H., 1937.—“The localization of *Trichinella spiralis* in the muscle of its host.” 25 (2), 349-353.
- k. HARWOOD, P. D., SPINDLER, L. A., CROSS, S. X. & CUTLER, J. T., 1937.—“Guanidine retention in experimental trichinosis of rabbits.” 25 (2), 362-371.

(1a) Sheldon finds that when isolated from cultures, infective larvae of *Strongyloides ratti* lose their viability within a few hours. Successful infections occurred in both the albino and the black-pied rats by means of subcutaneous injections of larvae but the degree of infection could not be satisfactorily estimated by examination of the daily larval output. He has made observations on the time factor in the disease and in the percentage of larvae which reach the adult state.  
P.A.C.

(1b) Sheldon finds that the rat can become resistant to infection with *Strongyloides ratti* when an infection is already present in the host. A series of small doses of infective living larvae and of heat-killed larvae also made the rats resistant to further infection. An almost complete immunity was registered in rats which had had an infection which had run its complete course in the normal way and died out.  
P.A.C.

(1c) Foster's quantitative examination of the helminths of equines shows that the average numbers present were 1,219 in 59 equines aged 9 to 15 years and 502 in 27 animals aged 16 to 30 years. He considers that this shows an age resistance to strongylid parasites in horses and mules except in the case of *Strongylus vulgaris* infections. J.W.G.L.

(1e) Since the first case was reported in 1808, at least 482 cases of hydatid disease have been recorded in Canada and U.S.A. 95% of the cases noted have occurred in immigrants. Although there is some evidence that hydatid is increasing in incidence in pigs it does not appear to be of greater frequency in man than formerly. R.T.L.

(1f) Biester & Eveleth have examined the blood changes in pigs suffering from ascariasis. There was a tendency to increase in sugar, amino acid nitrogen and inorganic phosphorus but urea nitrogen remained at a low level. The fluctuations in sugar were due to liver damage. P.A.C.

(1g) Landsberg & Foster have not found that the blood changes in dogs infected with *Ancylostoma caninum*, are always constant. There is generally an increase of polymorphonuclear cells, an increase in eosinophiles not regularly occurring. In a few cases the number of lymphocytes decreased while basophiles and monocytes seemed to be unaffected by the infection. The route of the infection seemed to have no bearing on the type or intensity of white cell changes. P.A.C.

(1i) The environmental conditions most favourable for the carriers of Bilharzia worms in Egypt have been studied by Barlow. The water should be plant-balanced or there should be a gentle flow. Really dirty water, foul and stagnant, repels them entirely. Localities which produce food plants, water grass preferably for Planorbis, *Potamogeton* for Bulinus or vegetable litter, e.g., the leaves and fruit of date palms are preferred. Alternating moderation of light and shade is ideal. Weedy spots favour the laying of eggs. Undisturbed sites are more frequently colonized than those disturbed by agricultural activities. Absence of natural enemies, e.g., fish, birds, etc., is important. Swiftly flowing water and occasional collections of water seem to be free from both kinds of carriers. Bulinus does better in running water than Planorbis. Barlow made a field experiment in canal and drain clearances. Clearances were spaced at intervals of two months. The snails collected monthly are tabulated. This method greatly reduced the snail population, especially in the case of *P. boissyi*. The view is put forward that monthly clearances over a long period of years would almost entirely eliminate the snails. These measures would also reduce the trematode infections of farm animals. The method is relatively inexpensive and requires no technique requiring special training. R.T.L.

(1j) By means of unilateral lumbar sympathectomy, Scheifley increased the blood flow to twice its normal in one hind leg of each of five dogs. Four months after operation the dogs were fed on trichinous meat, and the numbers of larvae in the muscles estimated thirty-five days after infection. No significant difference in the degree of localization of the larvae in the operated limbs and the normal limbs was observed, the diaphragms being more heavily infested than the extremities. V.D.S.

## 2—American Journal of Tropical Medicine.

- a. FOSTER, A. O. & CLARK, H. C., 1937.—“Vermineous aneurysm in equines of Panama.” 17 (1), 85-93.
- b. BERCOVITZ, Z., 1937.—“Clinical studies on human lung fluke disease (endemic hemoptysis) caused by *Paragonimus westermani* infestation.” 17 (1), 101-122.

(2a) Autopsies on 116 horses, 84 mules and 2 burros in Panama form the basis of this report by Foster & Clark. *Strongylus vulgaris* larvae were found causing aneurisms in 80% of the equines examined. Two out of five foals of under one month old were affected and it is suggested that intra-uterine infection may occur. Lesions are described with the aid of photographs and are classified under three headings: (i) Frank aneurisms, (ii) thick-walled vessels with some dilation, (iii) tortuous, sclerotic vessels of diminished calibre. Five to ten was the usual number of larvae found in the infected vessel. The probable effect of verminous arteritis on equines is discussed.

J.W.G.L.

(2b) Lung fluke is common in the South Pyengyang province of Korea. Of 1,108 sputums examined 108 were positive for ova of *Paragonimus*, 190 for tubercle bacillus and 810 were negative. Only 14 had both infections. The symptoms of 5 patients, given Lipiodol oil for diagnostic purposes, were improved. Emetine used intravenously is contra-indicated because of the danger of heart failure; it may be used hypodermically in 1 grain daily doses for 7 days, repeated after a week's rest. The only symptoms actually attributable to *Paragonimus* infection are cough and haemoptysis associated with the presence of ova. Physical and X-ray examinations are essentially negative.

R.T.L.

## 3—Annales de Parasitologie Humaine et Comparée.

- a. GOYANES ALVAREZ, J., 1937.—“*Spirocerca sanguinolenta* (Rudolphi, 1819) chez les chiens de Madrid. (Note préliminaire).” 15 (1), 1-8.
- b. ARREZA-GUZMAN, A., 1937.—“Recherches expérimentales sur le traitement de la strongyloïdose murine.” 15 (2), 125-145.
- c. GALLIEN, L., 1937.—“Recherches sur quelques trématodes monogénèses nouveaux ou peu connus.” 15 (1), 9-28; (2), 146-154.
- d. CHEN, H. T., 1937.—“Quelques observations sur un cycle évolutif de *Paragonimus* dans le sud de la Chine.” 15 (2), 155-161.

(3a) Goyanes Alvarez redescribes and figures *Spirocerca sanguinolenta* found in 8 out of 42 dogs autopsied in Madrid. [In the page-headings “*Spirocerca*” becomes “*Spirochaeta*.”]

B.G.P.

(3b) Arreza-Guzman has been unsuccessful in his search for a drug which will remove *Strongyloides*, although he has experimented with 6 common anthelmintics. As this worm may, in heavy infestations, cause severe symptoms or even death, he intends to continue his search.

P.A.C.

(3c) Gallien describes the following parasites of fishes of the North Sea and Atlantic Ocean around the British Isles: *Pseudobothrium pristiuri* n. g., n. sp. of the family Monocotylidae from the skin of *Pristiurus*

*melanostomus*; *Diclidophoropsis tissieri* n. g., n. sp. from the skin of *Macrurus laevis*, and *Diclidophora pagelli* n. sp. from the gills of *Pagellus centrodontus*, both of the family Diclidophoridae. There are brief systematic reviews of both families. He concludes with the description of *Dactylocotyle minus* (Olsson). The host fish was *Gadus poutassou*. The genus *Dactylocotyle* is briefly reviewed. E.M.S.

(3d) Chen describes the larval development of *Paragonimus* in *Assiminea lutea* in China. He illustrates the sporocyst and redia, and the metacercaria obtained from *Sesarma sinensis* and *S. dehaani*. R.T.L.

#### 4—Annales de la Société Belge de Médecine Tropicales.

- a. BOURGUIGNON, G. C., 1937.—“Un cas d'hépatite aiguë mortelle avec localisation massive de *Microfilaria perstans* dans le foie.” 17 (1), 1-5.
- b. HARKAWY, N., 1937.—“La bilharziose humaine dans le cercle de Bangui. Essai de traitement par divers composés antimoniaux.” 17 (1), 17-25.
- c. NITSEN, R. VAN, 1937.—“Essais de traitement de la bilharziose intestinale par les sels de cuivre. Note préliminaire.” 17 (1), 77-82.

(4c) Nitsen has used two organic copper compounds, “Dicuprène” or copper-oxyquinoline disulphonate of diethylamine and “Paludex” or copper-oxyquinoline sodium sulphonate, in the treatment of intestinal bilharziasis. The first is used intravenously, 10 c.c. being given daily for 7 days in acute cases of the infection, and a dose varying from 20 to 70 c.c. being required in chronic cases. Paludex is given per os, the necessary daily dose varying from 0.6 g. for children to 2 g. for adults. As much as 20 g. has been tolerated without toxic symptoms arising. With either drug clinical symptoms of the infection disappear by the 5th day, and all schistosome eggs disappear from the urine by the 6th to the 12th day. K.S.

#### 5—Annali d'Igiene.

- a. GIAQUINTO MIRA, M., 1937.—“Contributo agli studi sul problema della trasmissione della onchocercosi nel Guatemala.” 47 (3), 109-125.

(5a) Of the species of Simuliidae common in Guatemala, *Eusimulium ochraceum*, *E. mooseri* and *Simulium avidum*, the first is, in Giaquinto Mira's opinion, the only important vector of human onchocerciasis. This is borne out by the geographical distribution of the three midges (illustrated by three maps) and that of the endemic disease, and also by the fact that only *E. ochraceum* shows a predilection for biting man. B.G.P.

#### 6—Annals and Magazine of Natural History.

- a. ROTHSCILD, M., 1937.—“Note on the excretory system of the trematode genus *Maritrema* Nicoll, 1907, and the systematic position of the Microphallinae Ward, 1901.” (Ser. 10), 19 (111), 355-365.

(6a) The main plan of the excretory system of *Maritrema* is the same as that of the allied genera *Microphallus*, *Levinseniella* and *Spelotrema* members of the Microphallinae. Miss Rothschild considers that this subfamily should be raised to family rank and to include *Spelophallus* and

*Monocaecum* with the following addition to the definition of the family: "Excretory system of the '*Mesostoma*' type with flame-cell pattern  $2 [(2 + 2) + (2 + 2)] = 16$ . Cercariae are Xiphidiocercariae which encyst in the first intermediate host, or in an Arthropod." A tabular statement shows the difference between Microphallinae on the one hand and Heterophyidae and Opisthorchidae on the other. The Gymnophallinae cannot be included in the same family as the Microphallinae although they are probably more nearly related to each other than to the Opisthorchioidea. R.T.L.

### 7—Archiv für Hydrobiologie. Supplement-Band.

- a. SCHNEIDER, W., 1937.—"Freilebende Nematoden der Deutschen Limnologischen Sundaexpedition nach Sumatra, Java und Bali." 15 (1), 30-108.

(7a) Schneider deals systematically with free-living nematodes collected from inland waters in Sumatra, Java and Bali. A list of collection sites is given with oecological data such as temperature and pH of water, height above sea level and vegetation. Among the 79 species described there are 1 new genus, 23 new species and 4 new varieties. *Tylenchus dipsaci* var. *tobaensis* n. var., is the name given to a form causing galls on two water plants, namely, *Potamogeton malayanus* and *Myriophyllum spicatum* from Lake Toba in North Sumatra. T.G.

### 8—Archiv für Hygiene und Bakteriologie.

- a. DENECKE, K., 1937.—"Der Befall mit menschlichen Darmhelminthen auf der Elbinsel Finkenwärder und seine Ursachen." 117 (6), 332-362.

(8a) Denecke describes in great detail his researches into the incidence of intestinal helminths in the inhabitants of Finkenwärder Island, on the Elbe, and analyses his results with special attention to occupational and housing conditions. The total incidence is over 90%. Comparative egg-concentration tests by the Telemann and salt-flotation methods show the former to be superior. B.G.P.

### 9—Archiv für Schiffs- und Tropen-Hygiene.

- a. OTTO, J. H., 1937.—"Zur Frage der röntgenologischen Erkennbarkeit krankhafter Veränderungen am Magen-Darmkanal bei Patienten mit *Opisthorchis sinensis*." 41 (2), 296-302.  
b. MÜHLENS, P., 1937.—"14 'Yangtse-Fieber'-Erkrankungen (*Schistosomiasis japonica*) an Bord eines deutschen Handelsschiffes." 41 (2), 308-317.

### 10—Archivio Italiano di Scienze Mediche Coloniali e di Parassitologia.

- a. PENSO, G., 1937.—"Reperto di *Ascaridia perspicillum* (Rud.) vivo in uovo di gallina." 18 (2), 100-101.

(10a) Penso records the presence of a male *Ascaridia perspicillum* living within a hen's egg. He suggests that it may have migrated from the intestine

through the rectum and cloaca and ascended into the oviduct where it has become incorporated into the substance of the egg before the shell was laid on.

P.A.C.

### 11—Biochimica e Terapia Sperimentale.

- a. ASCOLI, A., 1937.—“Edoardo Perroncito e l'anemia del Gottardo.” 24 (11), 64-66.

(11a) This eulogy of Perroncito by Ascoli is reproduced from a lecture to the Veterinary Faculty at Milan.

B.G.P.

### 12—Brasil-Medico.

- a. MARTINS, A. V., 1937.—“Sobre a pesquisa dos ovos de *Schistosoma mansoni* pelo methodo da sedimentação concentração.” 51 (9), 319-321.

### 13—British Medical Journal.

- a. CAWSTON, F. G., 1937.—“Ducks and bilharzia disease.” [Correspondence.] No. 3971, p. 362.  
b. SARGENT, R. M., 1937.—“Bilharzial invasion of appendix.” No. 3977, p. 663.

### 14—Bulletin. Ministry of Agriculture and Fisheries. London.

- a. STANILAND, L. N. & BARBER, D. R., 1937.—“The efficiency of baths used for the hot-water treatment of narcissus bulbs.” No. 105, 29 pp.

(14a) Staniland & Barber present the results of investigations into the working of hot-water baths used in the treatment of narcissus bulbs infested with the eelworm, *Anguillulina dipsaci*. The standard treatment for such bulbs is 3 hours in water kept at 110°F. but it has been apparent for a long time that in many cases unsatisfactory results have been obtained when bulbs have been given the standard treatment. The authors have made detailed investigations into the various factors involved in bath treatment such as the shape of the bath, the nature of the bulb container (whether made of loose sacking or of rigid wire mesh), the method of heating the water and the shape and accuracy of the recording thermometers. They show that inefficiency may result from any or all of these factors and make recommendations for the improved construction of baths and bulb containers and on many other details involved.

T.G.

### 15—Bulletin de la Société de Pathologie Exotique.

- a. SANNER, A., DESTRIKATS & ALBRAND, 1937.—“Hémato-chylurie datant de dix ans chez une Réunionnaise. Présence de *Wuchereria bancrofti* dans le sang.” 30 (1), 109-112.  
b. GUILLIER, M., 1937.—“Au sujet de la présence de foyers de bilharziose vésicale dans la région d'Ambanja.” 30 (1), 112-113.  
c. JOSPIN, Y., 1937.—“Note sur deux kystes à filaire de Médine à localisation rare.” 30 (2), 146.  
d. ROBERT, J., 1937.—“Considérations sur quelques cas de distomatose hépatique à *Clonorchis sinensis* chez des Chinois de la Côte-Est de Madagascar.” 30 (2), 208-211.

## 16—Canadian Journal of Research. Section D. Zoological Sciences.

- a. CAMERON, T. W. M., 1937.—“Studies on the endoparasitic fauna of Trinidad mammals. V. Further parasites from the ocelot.” 15 (1), 24-27.
- b. CAMERON, T. W. M., 1937.—“Studies on the heterophyid trematode *Apophallus venustus* (Ransom, 1920), in Canada. Part II. Life history and bionomics.” 15 (2), 38-51.

(16a) Cameron gives a detailed description of *Trichocephalus serratus* found in the intestine of *Felis pardalis* from Trinidad and also records *Ancylostoma caninum*, *Molineus pardalis* and *Echinopardalis pardalis* from the same host.

D.O.M.

(16b) Cameron has determined by experiments the two intermediate hosts of *Apophallus venustus*. They are the snail, *Goniobasis livescens*, where development takes place up to the cercaria stage, and various fresh-water fishes, notably the cat fish, *Ameiurus nebulosus*, in whose musculature the metacercariae encyst. The definitive hosts are the cat, dog and raccoon, *Procyon lotor*, also the great blue heron, *Ardea herodias herodias*.

E.M.S.

## 17—Chinese Medical Journal.

- a. WATT, J. Y. C., 1937.—“Incidence of helminthic parasites with special reference to the epidemiology of Fasciolopsiasis buski in Shiao-shan, Chekiang, 1934-35.” 51 (1), 77-84.
- b. HSÜ, H. F. & CHOW, C. Y., 1937.—“Studies on certain problems of *Clonorchis sinensis*. II. Investigation in the chief endemic center of China, the Canton area.” 51 (3), 341-356.
- c. LING, L. C. & YAO, Y. T., 1937.—“The incidence of intestinal parasites in Kweiyang and Southern Yunnan.” 51 (3), 381-384.

(17a) A survey of Shanghai (Shiao-shan), Chekiang, China, made in 1934-35 showed that 90% of the dogs and cats harboured *Clonorchis sinensis*, 45% had *Diphylllobothrium mansonii*, 75% *Taenia crassicolis* [? cats only], 45% *Metagonimus yokogawai*, 60% ascarid species and 84% *Ancylostoma caninum*. In pigs only *Ascaris* was found. Although *Fasciolopsis buski* occurred in 83-84% of 1,120 of the villagers none were found in cats, dogs or pigs. The metacercariae of this fluke were found on a native plant, *Zizania aquatica*, as well as on the skin of water-chestnuts and caltrops. *Ascaris lumbricoides* occurred in 38%, *Trichuris trichiura* in 12-32% and hookworm in only 0-89% of the population.

R.T.L.

(17b) The authors report the results of their survey of *Clonorchis* infection in the Canton area of China. They record the intensity of infection, the fish eating habits of the people, the species and intensity of the infection in the incriminated fish and of the Bithynia snails, and give an account of the general conditions of pisciculture in the area. The paper concludes with a list of 40 species of fresh-water fish belonging to 23 genera, which are known intermediate hosts of *Clonorchis sinensis*. Of these, 24 species occur in China.

R.T.L.

## 18—Comptes Rendus des Séances de l'Académie des Sciences.

- a. BALOZET, L., 1937.—“ Cycle évolutif de *Brachylaemus suis* L.B. 1936.” 204 (8), 622-624.

(18a) Balozet outlines the development of *Brachylaemus suis*, whose adult stage is a parasite of Tunisian pigs. The intermediate host is a snail of the genus *Xerophila*, in which the development proceeds normally to the cercaria stage. The liberated cercariae then attack the snail anew, and develop in the suprapedal gland to metacercariae. Pigs and other susceptible animals are infected by ingestion of the snails.

E.M.S.

## 19—Comptes Rendus des Séances de la Société de Biologie.

- a. DÉVÉ, F., 1937.—“ Le pneumothorax hydatique suffocant du lapin.” 124 (3), 220-223.
- b. DÉVÉ, F., 1937.—“ Echinococcose hétérotopique de la plèvre chez le lapin.” 124 (4), 329-331.
- c. BERGHE, L. VAN DEN, 1937.—“ Sur l'existence, dans les ganglions inguinaux d'éléphantiasiques, d'une microfilare non encore signalée.” 124 (10), 1014-1015.
- d. SCHWETZ, J. & DARTEVELDE, E., 1937.—“ Sur les mollusques trouvés dans trois foyers de bilharziose du Bas-Congo.” 124 (12), 1237-1239.

(19c) Van den Berghe reports a microfilaria obtained by gland puncture in several cases of human elephantiasis in the eastern province of the Belgian Congo. It is of large size and without a sheath, measuring  $380\mu$  to  $450\mu$  by  $9\mu$  to  $11\mu$  with small nuclei. The posterior end is very fine and without nuclear core. It is regarded as of some importance in the pathogenicity of elephantiasis. It may be a third larval variety of *Onchocerca volvulus* of which two types are already known.

R.T.L.

(19d) Schwetz & Darteveld report, for the first time, on the molluscan fauna of three areas in Belgian Lower Congo. At Kimpese, between Matadi and Thysville, where numerous endemic cases of *Schistosoma mansoni* occur they collected *Lanistes congicus*, *Limnaea natalensis undussumae*, *Planorbis biossyi* and a few *Bulinus senegalensis*. At the village of Kimbemba, between Matadi and Leopoldville, where numerous cases of *S. haematobium* occur they found only a few *Lanistes congicus*, and *Limnaea natalensis undussumae* in large numbers. Repeated search did not reveal any other molluscan species here. At the Île de Mateba where *S. haematobium* is very common *Lanistes adansoni*, *Bulinus forskali*, *Planorbis misellus* and *Segmentina Kanisaënsis* were found. In none of these three regions did *Physopsis africana* occur although in eastern and southern Belgian Congo it is probably the principal vector of schistosomiasis. The authors suggest that the two species of Bilharzia have the same intermediate hosts in these regions.

R.T.L.

**20—Deutsche Jäger (Der).**

- a. WETZEL, R., 1937.—“Die Bekämpfung des Lungen- und Magenwurmbefalls beim Rehwild.” No. 41. [Reprint 3 pp.]

(20a) Wetzel here discusses methods for controlling the lungworms and stomach-worms of roe-deer which he described in a previous article. Treatment being impracticable, he recommends such measures as killing off heavily infected animals, rotation of grazing animals, the use of lime or Kainit against molluscs, and winter feeding from specially constructed mangers or fenced racks, both of which are figured.

B.G.P.

**21—Deutsche Tierärztliche Wochenschrift.**

- a. MEYER, 1937.—“Palisadenwürmer bei Absatzfohlen.” 45 (1), 20-22.  
 b. SCHMID, F., 1937.—“Die Diagnose der Magenwurmkrankheit unserer Wiederkäuer.” 45 (9), 145-148.  
 c. ULLRICH, H., 1937.—“Ueber *Parafasciolopsis fasciolaemorpha* n. g., n. sp., einem 1932 von Ejsmont neu entdeckten Parasiten des Elches.” 45 (11), 179-182.

(21a) Meyer describes the clinical picture and treatment of conditions occurring in young foals which he assumes to be due to heavy sclerostome infections. The usual preventive measures for pastures and stables are outlined and these, together with prophylactic treatment consisting of “equivorum,” given in oats to the foals at 12 to 14 weeks old, 8 to 10 months and again in the autumn of the second year, resulted in a reduction in the number of animals requiring treatment.

J.W.G.L.

(21b) Schmid deals briefly with methods of diagnosis of stomach-worms by concentrating faeces, by culturing eggs and examining the resulting larvae, and by post-mortem examination.

B.G.P.

(21c) Ullrich redescibes *Parafasciolopsis fasciolaemorpha* Ejsmont, 1932 from new material from *Alces alces* in Germany. Three infected elk harboured respectively 120, 31 and 12 flukes.

B.G.P.

**22—Empire Journal of Experimental Agriculture.**

- a. TAYLOR, E. L., 1937.—“Scientific problems of the poultry industry. IV. The economic and disease aspects of parasitic worm-infestation in poultry.” 5 (17), 43-47.

(22a) Though a number of poultry helminths are of common occurrence, Taylor does not think treatment to be warranted unless infestations are exceptionally heavy. Two worms only, *Syngamus trachea* and *Amidostomum anseris*, are of serious pathogenic importance in this country and under modern conditions of poultry husbandry these are kept well in hand. If, however, extensive methods of chicken rearing become common they may become a source of heavy loss.

P.A.C.

## 23—Farming in South Africa.

- a. ORTLEPP, R. J., 1937.—“Beware of the deadly hookworm in Merino sheep.” 12 (130), 21.
- b. MÖNNIG, H. O., 1937.—“Internal parasites of horses.” 12 (132), 101-103.
- c. WAGER, V. A., 1937.—“Bilharzia disease. The destruction of carriers.” 12 (132), 104.

(23c) Wager finds that the tree M’Nula or “Toortshout” grows naturally on the lowveld of the eastern and northern Transvaal, northern Zululand and Portuguese East Africa. Its botanical name is *Balanites maughanii*. Although it has a similar lethal effect on the molluscan carriers of Bilharzia as has been reported for *B. aegyptiaca* in the Sudan, Wager considers it unlikely that the fruit of this tree will displace copper sulphate for it kills fish and tadpoles and might have far reaching and disastrous results by upsetting the balance of nature.

R.T.L.

## 24—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

- a. BONNE, C., 1937.—“Darmwandhelminthiasis; identificatie van de worm, met een beschrijving van eenige nieuwe gevallen.” 77 (9/10), 618-622.

(24a) In 1935 Bonne described a nematode infection of the wall of the human small intestine [see Helm. Abs., Vol. IV, No. 115a]. He here describes two further cases and reports the diagnosis, made by Sandground from sections, of *Ancylostoma braziliense*. The hookworm in these cases is “erratic,” being in the wrong host. Adults, eggs and larvae appeared in one case.

B.G.P.

## 25—Indian Medical Gazette.

- a. GHARPURE, P. V. & GHARPURE, V. V., 1937.—“The rarity of the male *Enterobius vermicularis*.” 72 (1), 23.
- b. MAPLESTONE, P. A., 1937.—“The eggs of *Taenia solium* and *Taenia saginata*.” 72 (3), 149-151.

(25b) Maplestone confirms Southwell’s statement that the eggs of *Taenia solium* and *T. saginata* are indistinguishable and draws attention to the extent to which text-books repeat the statement that the eggs of *T. solium* are round and those of *T. saginata* oval or ovoid.

R.T.L.

## 26—Journal of the American Medical Association.

- a. FAUST, E. C., 1937.—“The pharmacopeia and the physician: the use of anthelmintics.” 108 (5), 386-392.

(26a) Faust has prepared a valuable summary of current knowledge on anthelmintics. The drugs Betanaphthol, thymol, oil of chenopodium, carbon tetrachloride, tetrachlorethylene, santonin, hexylresorcinol, ficin and gentian violet are dealt with in turn. There follow paragraphs on their use in hookworm, ascariasis, trichocephaliasis, oxyuriasis, strongyloidiasis,

tapeworm infections, schistosomiasis, fascioliasis, fasciolopsiasis, clonorchiasis, opisthorchiasis, heterophyidiasis, metagonimiasis and paragonimiasis. Oleoresin of aspidium is the drug of choice for tapeworms, antimony and potassium tartrate for schistosomes. Emetine hydrochloride is only satisfactory in fascioliasis. Ethyl chloride is the best for local use in patients suffering from creeping eruption.

R.T.L.

## 27—Journal of the American Veterinary Medical Association.

- a. RIETZ, J. H., 1937.—“Control of parasites in sheep.” 90 (2), 163-170.

(27a) Rietz's investigations on the control of internal parasites of sheep by anthelmintics resulted in the conclusion that for gastro-intestinal parasites 1 oz. for lambs and up to 3 oz. for adult sheep of a 1½% solution of copper sulphate was effective when given, after fasting for 24 hours, at three-weekly intervals throughout the year. Copper sulphate salt licks were found to be dangerous to use and ineffective. For lungworms chloroform anaesthesia or the intratracheal injections of 3 to 6 c.c. of an oily solution of pyrethrum was found to be effective.

J.W.G.L.

## 28—Journal of the Egyptian Medical Association.

- a. ABDEL-KHALIK, A. K., 1937.—“The parasitic infestation of Egyptian infants and children.” 20 (1), 9-16.  
b. KHALIL, M., 1937.—“Birkas and the rôle they play in the spread of diseases.” 20 (2), 59-61.

(28a) In Egyptian infants and children, mostly belonging to Cairo, the incidence of *Bilharzia* infection was 1·6%, *Trichostrongylus* 11·5%, *Hymenolepis nana* 13·1%, *Ancylostoma* 16·4%, *Ascaris* 16·4% and *Oxyuris* 1·6%. 50% were found infected in spite of the absence of clinical signs.

R.T.L.

(28b) The danger to health of the birkas or pools surrounding villages in Egypt is greatly exaggerated. Of 20 birkas in the neighbourhood of Khanka only 5% were found to contain *Bulinus* snails.

R.T.L.

## 29—Journal of Helminthology.

- a. HURST, R. H. & TRIFFITT, M. J., 1937.—“Further experiments on the chemical treatment of soil infected with *Heterodera schachtii*.” 15 (1), 1-8.  
b. HURST, R. H. & FRANKLIN, M. T., 1937.—“Field experiments in Lincolnshire on the chemical treatment of soil infected with *Heterodera schachtii*.” 15 (1), 9-20.  
c. CARROLL, J. & McMAHON, E., 1937.—“Potato eelworm (*Heterodera schachtii*): further investigations.” 15 (1), 21-34.  
d. FOGGIE, A., 1937.—“An outbreak of parasitic necrosis in turkeys caused by *Plagiorchis laricola* (Skrjabin).” 15 (1), 35-36.  
e. PENFOLD, W. J. & PENFOLD, H. B., 1937.—“Cysticercosis bovis and its prevention.” 15 (1), 37-40.

- f. PENFOLD, W. J., PENFOLD, H. B. & PHILLIPS, M., 1937.—“*Taenia saginata*: its growth and propagation.” 15 (1), 41-48.
- g. CLAPHAM, P. A., 1937.—“On some lesions associated with helminths in birds of economic importance.” 15 (1), 49-52.
- h. FRASER, A. H. H. & ROBERTSON, D., 1937.—“On the incidence of abomasal parasites in fat lambs from the same flock.” 15 (1), 53-60.

(29a) Hurst & Triffitt describe the results of a continuation of earlier pot experiments with calcium cyanamide and urea, and field trials of ferric oxide on land infected with *Heterodera schachtii*. A second planting of potatoes in series of pots which had received dressings of calcium cyanamide and urea confirmed the results obtained from the first plants in the calcium cyanamide series but showed that urea had a retarding rather than a lethal action on the cyst contents. It was also shown that where cabbages instead of potatoes were grown immediately following the application of calcium cyanamide the lethal effect on the eelworm was the same. Applications of ferric oxide to infected soil at St. Albans again resulted in an improved yield, but this improvement was not shown when ferric oxide was applied to uninfected land.

M.J.T.

(29b) Hurst & Franklin describe field experiments with calcium cyanamide and ferric oxide. The layout of the experiments was in a form equivalent to two Latin squares. Calcium cyanamide was applied at the rate of 30 cwt. per acre, the land being twice roto-tilled to produce a fairly-even distribution of the dressing. Commercial “levigated” ferric oxide at the rate of 13 cwt. per acre was applied in the drills at the time of planting. At the time of the application of calcium cyanamide, one month prior to planting potatoes, the moisture content of the soil was greater than the optimum suggested by previous laboratory experiments. Control, calcium cyanamide and ferric oxide plots gave yields of 7.9, 11.1, and 7.57 tons of ware per acre respectively. The difference in yield between calcium cyanamide and control plots was found to be significant. Average increases in cyst content of the soil following the crop were 36.9, 7.8 and 38.8 per 50 g. soil for control, calcium cyanamide and ferric oxide plots respectively.

M.J.T.

(29c) Carroll & McMahon describe series of pot experiments which show the effects of early and retarded attack by *Heterodera schachtii* larvae on potatoes and the length of time which may elapse between planting potatoes in infected soil and destroying the plants by removal of tops and seed tuber without increasing the cyst content of the soil. The retarding effect of newly sterilized soil on the hatching of larvae is confirmed. It is shown that plants heavily attacked after growth is well established do not show marked symptoms of disease but that early attack produces “potato sickness.” The addition of root excretion from plants grown in untreated soil fails to neutralize the retarding effect of newly sterilized soil on the hatching of larvae. The roots of plants grown for 6 weeks in infected soil before destruction by removal of seed tubers and shoots do not bear cysts. A few small cysts containing a few eggs develop after 8 weeks growth and a fair infestation results from 66 days growth before destruction. Iron oxide in water was found to retard hatching.

M.T.J.

(29e) Penfold & Penfold have found that oxen infected with *Cysticercus bovis* are resistant to further infection. Such primary infections remain viable only about 9 months but the resistance persists for a very long time. A small number of cysts, probably 5 or less, is enough to produce a complete immunity. They suggest using this method of immunization in Syria and other parts of the world where the disease is prevalent. P.A.C.

(29f) Penfold, Penfold & Phillips have evidence that man may be infested with the same specimen of *Taenia saginata* for 35 years or more. The average rate of growth is 8 or 9 segments per day though it may be more rapid. Maturity and the passage of segments has occurred 54 days after feeding. They believe a complete mature worm has under 1,000 segments while each gravid segment contains about 80,000 eggs. P.A.C.

(29g) Clapham draws attention to the fact that *Capillaria longicollis* and *Ascaridia lineata* may produce disease and possibly death in domestic birds. P.A.C.

(29h) From an examination of 75 fat lambs slaughtered during May, July, August and September, Frazer & Robertson found the upper limit of infestation to be 2,100 for *Haemonchus* and 4,670 for *Ostertagia*. *Ostertagia* showed little variation during the period but heavy infestations with *Haemonchus* did not appear until August. The results obtained in July showed a wide difference in the infestation of single and twin lambs. D.O.M.

### 30—Journal of Laboratory and Clinical Medicine.

- a. BAUMGARTNER, E. A. & COWLES, A., 1937.—“Trichinosis, with a report of two cases with eosinophiles in the stools.” 22 (5), 484-489.
- b. VILLELA, G. G. & TEIXEIRA, J. C., 1937.—“Blood chemistry in hookworm anemia.” 22 (6), 567-572.

(30b) Villela & Teixeira have determined the chemical changes in blood plasma of 14 patients with hookworm anaemia, 9 of whom showed oedema. The results suggested that the production of oedema was associated with a reduction in the albumin fraction of the plasma proteins, and that this was due to a lack of protein in the diet. Low values for cholesterolaemia were also attributed to a deficient diet. R.H.H.

### 31—Journal of Oriental Medicine.

- a. MORIKAWA, Y. & FUKUDA, S., 1937.—“Ueber die Darm-Parasiten Eier, die an ‘Tukemono’ haften.” 26 (2), 269-276. [In Japanese: German summary p. 29.]
- b. YOKOYAMA, T., 1937.—“*Cysticercus pisiformis*.” 26 (3), 503-504. [In Japanese: English summary p. 42.]

### 32—Journal of Parasitology.

- a. OLSEN, O. W., 1937.—“Description and life history of the trematode *Haplometrana utahensis* sp. nov. (Plagiiorchiidae) from *Rana pretiosa*.” 23 (1), 13-28.
- b. RANKIN, jr., J. S., 1937.—“New helminths from North Carolina salamanders.” 23 (1), 29-42.

- c. TURNER, E. L., DENNIS, E. W. & BERBERIAN, D. A., 1937.—"The production of artificial immunity against hydatid disease in sheep." 23 (1), 43-61.
- d. DENNIS, E. W., 1937.—"A stable concentrated purified antigen for the immunological study of hydatid disease." 23 (1), 62-67.
- e. BRAND, T. v., 1937.—"The anaerobic glycogen consumption in *Ascaris* females and males." 23 (1), 68-72.
- f. PORTER, D. A., 1937.—"An increase in the proportion of basophilic leucocytes in guinea pigs experimentally infected with swine lungworms." 23 (1), 73-82.
- g. FOSTER, A. O. & CORT, W. W., 1937.—"The stability of the cat and dog strains of *Ancylostoma caninum*." 23 (1), 83-93.
- h. HOPKINS, S. H., 1937.—"A new type of *Allocreadid* cercaria: the cercariae of *Anallocreadium* and *Microcreadium*." 23 (1), 94-97.
- i. SHELDON, A. J., 1937.—"Successful infection of mice with *Strongyloides ratti*." 23 (1), 98.
- j. MOORTHY, V. N., 1937.—"A simple method of staining and mounting nematode larvae." 23 (1), 100-102.
- k. MANTER, H. W., 1937.—"A curious case of accidental parasitism." 23 (1), 103-104.
- l. SCHAPIRO, M. M., 1937.—"A quantitative study of egg production in *Taenia saginata*." 23 (1), 104-105.
- m. ALICATA, J. E. & SWANSON, L. E., 1937.—"*Fasciola gigantica*, a liver fluke of cattle in Hawaii, and the snail, *Fossaria ollula*, its important intermediate host." 23 (1), 106-107.
- n. SCOTT, J. A., 1937.—"A simple substitute for antiformin for parasitological uses." 23 (1), 109.
- o. SCOTT, J. A., 1937.—"The effect of various solutions on helminth eggs in feces." 23 (1), 109-112.
- p. McMULLEN, D. B., 1937.—"An experimental infection of *Plagiorchis muris* in man." 23 (1), 113-115.
- q. PROMMAS, C. & DAENGSVANG, S., 1937.—"Feeding experiments on cats with *Gnathostoma spinigerum* larvae obtained from the second intermediate host." 23 (1), 115-116.

(32a) Olsen found that the eggs of *Haplometrana utahensis* n. sp. hatched only within the snail, *Physella utahensis*, developing in the tissues of this host into mother and daughter sporocysts. Seven weeks after infection the snail begins to shed Xiphidiocercariae, which attack and become encysted within the epidermis of the frog, *Rana pretiosa*, which thus acts as second intermediate host. The frog becomes infected with the adult fluke by ingesting cast-off skins containing the trematode cysts. E.M.S.

(32b) From an examination of more than a thousand hosts representing 19 species of North American salamanders Rankin has obtained 5 new trematodes and 2 new nematodes, viz., *Phyllodistomum solidum* n. sp. from *Desmognathus fuscus fuscus*, *Gorgoderina tenua* n. sp. from the bladder of *Eurycea gutto-lineata*, and *G. bilobata* n. sp. from *Ambystoma opacum*, *D. fuscus fuscus*, *Pseudotriton montanus montanus* and *P. ruber ruber*. All three occur in the urinary bladder. *Allocreadium pseudotritoni* n. sp. is reported from the intestine of *Pseudotriton montanus montanus*, *P. ruber ruber* and *Diplostomulum desmognathi* n. sp. from the body cavity of *Desmognathus fuscus fuscus*, *D. phoca* and *D. quadramaculatus*. A second species is reported for the nematode genus *Omeia*, viz., *O. papillocauda* n. sp. from the intestine of *D. fuscus fuscus*, *D. phoca*, *D. quadramaculatus* and *Gyrinophilus porphyriticus*.

*danielsi*. *Oxyuris magnavulvaris* n. sp. occurs in *D. fuscus fuscus* and several other salamanders. The female worm only has so far been found. R.T.L.

(32c) Turner, Dennis & Berberian prepared an antigen from the viable scolices and germinative membranes of fresh hydatid cysts from sheep and cattle, by means of which lambs were partially immunized against hydatid. The resistance was not complete but after experimental infections, the treated lambs generally showed fewer and smaller cysts. They were always superficial, avoiding the deep tissues of liver and lung, and they had thick calcified walls, indicating a strong reaction on the part of the host. The Casoni reaction is a reliable test of hypersensitivity in resistant animals.

P.A.C.

(32d) Dennis describes in detail a method of obtaining a pure hydatid protein antigen which is stable, specific and sensitive. It is useful for precipitation, complement-fixation and for the Casoni reaction. Uniformly good results have been obtained, using all three reactions in a number of human and animal carriers of hydatid cysts.

P.A.C.

(32e) v. Brand finds that in *Ascaris lumbricoides* removed from pigs and examined immediately, the glycogen content tends to be slightly higher in the male than in the female. The worms were kept under anaerobic conditions in physiological saline at 37°C. and the glycogen consumption of the two sexes measured. During the first 24 hours, the rate was the same but later it decreases rapidly in the females. The variation was, however, very marked.

P.A.C.

(32g) Foster & Cort find that the dog strain of *Ancylostoma caninum* is stronger than the cat strain. Cats are less frequently parasitized than dogs and their infections are lighter. The cat strain will not parasitize dogs heavily until several generations have been passed through after which it remained sensitive to dogs and only slightly so to cats. They put forward the theory that the dog strain is older and more stable than the cat strain.

P.A.C.

(32h) Hopkins has not yet completed the life-history studies of *Anallocreadium armatum* and *Microcreadium parvum*. Cercariae from the snail, *Amnicola peracuta*, have been allowed to attack *Musculium ferrissi* and have developed to metacercariae, upon which the identification is based. The cercariae appear to be intermediate in type between those of the Lepocreadiinae and other Allocreadiidae.

E.M.S.

(32j) Moorthy gives details of a technique for staining and mounting guineaworm larvae obtained from infected cyclops. The latter are killed in a cold mercuric chloride, sodium-chloride fixative, which kills the cyclops more quickly than the contained larvae. The latter are dissected out whilst still alive into the fixative and are then killed by heating over a flame. Staining is carried out by running under the coverslip a mixture of methylene blue and Giemsa stain. This is allowed to act for 24 hours and is then displaced by 2% formalin in which the stained larvae are mounted. The coverslip is sealed with gold size and Apathy's cement. Directions are given for applying the method to quantities of larvae in watch glasses.

T.G.

(32k) A single living *Clinostomum attenuatum*, a parasite of bitterns and normally acquired by eating frogs, was found in a pigeon. R.T.L.

(32l) Schapiro has counted the eggs in four gravid segments obtained from four different specimens of *Taenia saginata*. The counts for the four segments were 117,855, 129,765, 131,664, 115,956 with a mean of 123,810. R.T.L.

(32n) A simple substitute for antiformin is prepared by Scott as follows: "Into 1,500 c.c. of distilled water stir 400 grams of bleaching powder. In 500 c.c. distilled water dissolve 440 grams of sal soda, or powdered sodium carbonate may be used in smaller quantity allowing for the difference in water of crystallization. When both solutions are cool, mix in a jar or flask and shake very thoroughly. Filter through an absorbent cotton pad in a Büchner funnel with a filter pump. These amounts make about one litre of solution with roughly 800 parts per million of free chlorine when made with the convenient stabilized bleaching powder now available, or of higher chlorine content if fresh ordinary powder is used. The exact amount of free chlorine may be easily determined by the standard method of titration in a dilute acid solution with N/100 sodium thiosulphate against the iodine freed by potassium iodide, using starch as an indicator. If stored in a bottle tightly closed with a slightly greased glass stopper, the chlorine content of the undiluted solution will remain unchanged for many months in any climate. The titrable alkalinity is about equal to a N/2 solution of sodium carbonate." R.T.L.

(32o) Tabulated data are given to show the rate of loss of eggs of *Ascaris*, hookworm and *Schistosoma* through hatching when kept for days in tap-water, 0.7% NaCl, N/10 NaOH, 2% Cl Sol. R.T.L.

(32p) A first record of the successful experimental infection of man with a species of *Plagiorchidae* is recorded. Metacercariae of *Plagiorchis muris* were dissected from *Stagnicola emarginata angulata*. Eggs were found in the stool for the first time 9 days after the cysts were swallowed. A graph gives a striking indication of the rise and fall in egg output during the succeeding weeks. R.T.L.

(32q) Cats have been successfully infected with adult *Gnathostoma spinigerum* by feeding with larval gnathostomes from the fresh-water fish *Ophicephalus striatus* which had been experimentally infected from infected cyclops. Eggs were passed in the faeces of the cats 6 months after ingestion of the infected fish. R.T.L.

### 33—Journal of Pathology and Bacteriology.

- a. BIGGART, J. H., 1937.—"Human infestation with *Fasciola hepatica*." 44 (2), 488-489.

### 34—Journal of the Philippine Islands Medical Association.

- a. AFRICA, C. M., 1937.—"Parasitological oddities." 17 (2), 83-93.

(34a) Africa briefly summarizes unusual locations and occurrences of helminth parasites in the human body which have been reported. R.T.L.

## 35—Journal of the South African Veterinary Medical Association.

- a. ORTLEPP, R. J., 1937.—“The biology of onchocerciasis in man and animals.” 8 (1), 1-6.

(35a) Ortlepp summarizes present knowledge regarding the transmission of onchocerciasis in man and animals. He draws attention to the occurrence of this disease in cattle in South Africa where the affected parts of the body are much more extensive than in Australia. The whole of the subcutaneous tissues may be affected and the nodules may number several hundreds. Free adults in the tissues belong to the species *O. gutturosa* while those producing nodules are *O. gibsoni*. In the Union of South Africa the condition occurs in Mafeking, Vryburg, Northern Transvaal and Natal. It is probably also present in Swaziland. All these regions are low-lying bushveld areas traversed by a few streams. The Tugela valley near Weenen in Natal is heavily infected, 90% of a herd of over 600 cattle had visible nodules on the body. The vector in South Africa has not yet been determined.

R.T.L.

## 36—Journal of Tropical Medicine and Hygiene.

- a. NORONHA, A. J., 1937.—“A nematode worm passed in the stools by a patient suffering from an irregular pyrexia of obscure origin.” 40 (1), 1-4.  
b. CAWSTON, F. G., 1937.—“Bowel symptoms in bilharzia disease.” 40 (2), 15-16.  
c. CAWSTON, F. G., 1937.—“The resistance of *Melanoides tuberculata* (Müller) to *Schistosoma*.” 40 (2), 16.  
d. CAWSTON, F. G., 1937.—“Vitamin deficiency in bilharzia disease and some successes with anthiomaline.” 40 (3), 31-32.  
e. O'CONNOR, F. W., 1937.—“Filariasis in Antigua.” 40 (3), 25-31; (4), 42-48.  
f. CAWSTON, F. G., 1937.—“The control of the bilharzia snail-host in South Africa and other countries.” 40 (5), 56-57.

(36a) An ascarid-like worm passed by a patient at Poona is described and illustrated but not diagnosed. The worm is not associated by the author with the pyrexia from which the patient suffered.

R.T.L.

(36d) Cawston recommends fresh fruit juice in bilharzia disease and during convalescence after treatment. Anthiomaline can be given with safety in doses of 3 to 4 c.c.; 12 to 15 injections of 4 c.c. is generally all that is required to effect a cure. In the author's view anthiomaline given intravenously is superior to tartar emetic. It is non-irritating and there is an absence of coughing at the time of the injection.

R.T.L.

(36e) The incidence of *Filaria bancrofti* infection in Antigua is conservatively estimated at 38.5%. It is most prevalent in the central clay area and least in the limestone section. The western volcanic area is intermediate in degree. *Culex fatigans* is shown both by experimental and natural infections to be the local intermediate host. There is a nocturnal periodicity, the numbers being highest towards midnight. Elephantiasis associated with *F. bancrofti* infection frequently develops without any febrile symptoms.

There is a high family incidence of filariasis in some families. The significance of enlarged glands in the subinguinal, inguinal and epitrochlear regions is discussed. The author states that "until there is much more evidence in favour of the filarial origin of all or of most cases of glandular enlargement it seems unwise to include them in the incidence of infection." *Microfilaria ozzardi* was noted in a few cases while *Culicoides furens* is prevalent in some of the coastal areas.

R.T.L.

### 37—Journal of the Washington Academy of Sciences.

- a. SPINDLER, L. A., 1937.—"Resistance to intestinal trichinosis in experimental animals induced by feeding metabolic products of encysted trichinae." 27 (1), 36-38.
- b. PRICE, E. W., 1937.—"North American monogenetic trematodes. I. The superfamily Gyrodactyloidea." 27 (3), 114-130.

(37a) Spindler believes that the metabolic products of *Trichinella spiralis* in the muscles contains a substance capable of inducing a degree of immunity to trichinosis when fed by the mouth to rats, rabbits and guinea-pigs. He obtained this substance by treating gastric juice in which trichinous meat had been digested. The active principle is stable to moderate heat.

P.A.C.

(37b) Price has undertaken a survey of the whole of the Monogenea, with redescription and revision of American forms. In this first part he reviews the taxonomy of the Gyrodactyloidea, giving keys for the separation of all groups down to genera. He describes *Gyrodactylus gurleyi* n. sp., *Ancyrocephalus similis* n. sp. and redescribes *Ancyrocephalus teuthis*, *A. lactophrys*, *A. tylosuri* and *Diplectanotrema balistes* n. comb., all originally described by MacCallum.

E.M.S.

### 38—Lingnan Science Journal.

- a. LI, L. Y., 1937.—"Some trematode parasites of frogs with a description of *Diplodiscus sinicus* sp. nov." 16 (1), 61-70.

(38a) Li has examined 125 frogs of three species, and reports the following parasites: *Diplodiscus sinicus* n. sp., *D. japonicus* nom. nov. (formerly *D. amphichrus japonicus* Yamaguti 1936), *Glypthelmins staffordi* and *Pleurogenes taylori*. All are recorded for the first time from China.

E.M.S.

### 39—Medical Journal of Australia.

- a. ROSS, I. C., 1937.—"Infestation of man with *Trichostrongylus colubriformis* from sheep." 24th Year, 1 (4), 122-123.
- b. KNEEBONE, J. le M., 1937.—"Hydatid disease: a survey of sixty cases." 24th Year, 1 (6), 201-206.
- c. GRAHAM, H. B., 1937.—"Hydatid disease in children." 24th Year, 1 (6), 206-214.

(39a) Clunies Ross records infections with *Trichostrongylus colubriformis* of two laboratory assistants in the University of Sydney who were frequently

handling trichostrongyle larvae from sheep. The identification of the species was carried out by feeding the larvae to a bottle fed, worm free lamb. Eggs first appeared in the lamb's faeces on the 18th day and on slaughter on the 26th day, 17 adult *T. colubriformis* were recovered; the control remained negative to faecal examination.

J.W.G.L.

#### 40—Medical Log.

- a. CAMERON, T. W. M., 1937.—“The internal parasites of man in Eastern Canada.” 2 (1), 50-63.

(40a) *Ascaris lumbricoides* and *Trichuris trichiura* are not common in man in Eastern Canada. The commonest nematode is *Enterobius vermicularis*. Hookworms [species unspecified] occur only in the mines. Cameron states that “the most serious of the roundworms in Canada is *Trichinella spiralis*. This parasite is quite common—more so than is believed and as it causes very varying symptoms and as its presence can be diagnosed with difficulty, it is often unrecognized.” The commonest tapeworm is *Diphyllobothrium latum*. It is especially common between south-eastern Manitoba and Lake Nipigon in Ontario. *Taenia saginata* and *T. solium* are also reported. Hydatid cysts are not very common. *Dipylidium caninum* and *Hymenolepis nana* have occasionally been found in human beings in Canada. No adult flukes have been recorded but cercarial dermatitis is apparently widespread.

R.T.L.

#### 41—Münchener Tierärztliche Wochenschrift.

- a. DUMONT, E., 1937.—“Beitrag zur Differentialdiagnose parasitärer und nichtparasitärer Gebilde bei der mikroskopischen Untersuchung des Schweinekotes.” 88 (8), 87-93.

(41a) Dumont's paper is mainly concerned with the differentiation of parasitic eggs and larvae from vegetable debris, pollen grains and fungal spores in pig faeces. He gives figures of some of the principal parasite stages and artefacts.

B.G.P.

#### 42—Nature.

- a. DAVEY, D. G., 1937.—“Attachment of the sheep hookworm to the common sheep tapeworm.” 139 (3510), 250.
- b. KING, R. L. & BEAMS, H. W., 1937.—“Effect of ultra-centrifuging on the egg of *Ascaris megalocephala*.” 139 (3513), 369-370.

#### 43—New England Journal of Medicine.

- a. STRONG, R. P., 1937.—“Studies on Filarioidea. Summary of remarks.” 216 (11), 461-463.
- b. AUGUSTINE, D. L., 1937.—“Trichinosis—incidence and diagnostic tests.” 216 (11), 463-466.

(43a) The morbid conditions associated with the Filarioidea are among the most important problems in tropical medicine and parasitology. Strong briefly summarizes our knowledge of the modes of spread of those reported

from man and gives a table of the various species under the relevant sub-families. [In this he includes a few which are not recorded from man and omits others.] R.T.L.

(43b) Augustine points out that the incidence of trichinosis in America is about ten times greater than was formerly supposed, the atypical clinical symptoms leading to incorrect diagnosis in sporadic and mild cases. He considers the examination of blood, spinal fluid, and faeces for parasites and biopsy to be a waste of time; a correct diagnosis depending on a study of the history of the illness, a complete physical examination, frequent examination for eosinophilia, and the use of skin and precipitin tests. The technique of preparing antigen and carrying out the tests is fully described. The precipitin reaction is positive about the 4th week, but "false positive" reactions are obtained after the administration of certain drugs such as quinine and arsenicals. The intradermal test is of the immediate type in humans and swine, but is delayed in the first week of the illness, when no precipitins can be demonstrated. Non-specific reactions may occur in individuals with an unrecognized past infection and in allergic individuals, but not in individuals harbouring other parasites. Eosinophilia is present about the second week, but may be absent in severe cases, or in cases with a secondary infection. Varying results obtained by different workers are due to the fact that the methods are not yet standardized. V.D.S.

#### 44—Nuova Veterinaria.

- a. TANAI, F., 1937.—"Infestione echinococcica poliviscerale. (Considerazioni)." 15 (2), 19-23.

#### 45—Parasitology.

- a. CAWSTON, F. G., 1937.—"Recent progress in the cure of bilharzia disease in South Africa." 29 (1), 1-3.
- b. BAYLIS, H. A., 1937.—"On the ascarids parasitic in seals, with special reference to the genus *Contracaecum*." 29 (1), 121-130.

(45a) That potassium antimonium tartrate contains a higher proportion of antimony than sodium antimonium tartrate explains its greater efficacy. *Schistosoma mansoni* is a stouter parasite than *S. haematobium* and consequently requires a relatively higher total dose. The vast majority of patients treated with Fouadin in South Africa are incompletely cured. This drug contains only 13.5% of antimony as compared with 36.46% in tartar emetic. Antimony thioglycollamide cannot be recommended because of its low antimony content and comparative insolubility. R.T.L.

(45b) Baylis reviews 9 species of ascarid worms which have been obtained from seals. He is of the opinion that *Ascaris rectangula* and *A. stenocephala* are synonyms of *Contracaecum osculum*, a full description of which species he gives. *C. radiatum* is also redescribed, while he gives useful notes on *C. turgidum*, *Phocascaris phocae*, *Porrocaecum decipiens*, *Anisakis similis* and *A. rosmari*. *Ascaris patagonica* is probably a synonym of *Anisakis similis* while *Ascaris dehiscens* is not recognizable from descriptions. P.A.C.

## 46—Plant Disease Reporter.

- a. PINCKARD, J. A., GODKIN, J. & HENDERSON, R. G., 1937.—“Occurrence of tobacco diseases in Virginia in 1936.” 21 (2), 27-29.
- b. SCHMIDT, R., 1937.—“Relative susceptibility of certain varieties of dahlias to root-knot nematode.” 21 (2), 32-33.
- c. SHAW, L., 1937.—“Report of the work of the Tobacco Disease Survey Committee for 1936. Nematode diseases.” 21 (3), 49.

(46a) Pinckard, Godkin & Henderson record severe losses due to *H. marioni* in small areas in Pittsylvania, Patrick and Halifax counties. M.J.T.

(46b) Schmidt lists 41 varieties of dahlias under 3 headings according to the severity of their infection by *H. marioni*. Of these 13 showed severe infection, 9 showed moderate infection and 19 showed light infection. M.J.T.

(46c) Shaw reports that *Heterodera marioni* reduced tobacco production by 5% in Gadsen County, Florida, and caused severe losses in Virginia. In North Carolina losses were less severe than in 1935, owing apparently to delayed infection caused by dry weather in May and June. M.J.T.

## 47—Proceedings of the Helminthological Society of Washington.

- a. THORNE, G., 1937.—“A revision of the nematode family Cephalobidae Chitwood and Chitwood, 1934.” 4 (1), 1-16.
- b. THORNE, G., 1937.—“Notes on free-living and plant-parasitic nematodes, III.” 4 (1), 16-18.
- c. McBETH, C. W., 1937.—“Observations on a predaceous nematode.” 4 (1), 18.
- d. BENNETT, H. J. & RE, J. D., 1937.—“Parasites of *Amphiuma tridactylum*.” 4 (1), 19.
- e. CHITWOOD, B. G., 1937.—“A new trichostrongyle, *Allintoshius nycticeius*, n. g., n. sp., (Nematoda), from a bat.” 4 (1), 19-20.
- f. McINTOSH, A., 1937.—“Two new avian liver flukes with a key to the species of the genus *Athesmia* Looss, 1899 (Dicrocoeliidae).” 4 (1), 21-23.
- g. McINTOSH, A., 1937.—“A new trematode, *Postharmostomum noveboracensis*, n. sp. (Brachylaemidae), from a chipmunk.” 4 (1), 23-24.
- h. CRAM, E. B., 1937.—“A species of Orthoptera serving as intermediate host of *Tetrameres americana* of poultry in Puerto Rico.” 4 (1), 24.
- i. PRICE, E. W., 1937.—“Redescriptions of two exotic species of monogenetic trematodes of the family Capsalidae Baird from the MacCallum Collection.” 4 (1), 25-27.
- j. PRICE, E. W., 1937.—“A new monogenetic trematode from Alaskan salmonoid fishes.” 4 (1), 27-29.
- k. GRAHAM, G. L., 1937.—“The infections produced in rats by a single larva of *Strongyloides ratti*.” 4 (1), 29-30.
- l. OLSEN, O. W., 1937.—“A new species of cestode, *Dendrouterina nycticoracis* (Dilepidiidae), from the black-crowned night heron (*Nycticorax nycticorax hoactli* (Gmelin)).” 4 (1), 30-32.
- m. STOLL, N. R., 1937.—“Tapeworm studies, IV. *Momiezia expansa* of sheep strain contracted by calf.” 4 (1), 32.
- n. MUELLER, J. F., 1937.—“A case of broad tapeworm in Syracuse, N.Y.” 4 (1), 32.
- o. STEINER, G., 1937.—“Opuscula miscellanea nematologica, V.” 4 (1), 33-38.
- p. HARWOOD, P. D., 1937.—“The frequency of change of cecal contents in fowls.” 4 (1), 38-39.

(47a) Thorne has revised the nematode family Cephalobidae and set up 3 new subfamilies as follows: Panagrolaiminae, Acrobelinae and Chambersiellinae. The Panagrolaiminae includes *Panagrolaimus* with *P. obesus* n. sp., *Neocephalobus*, *Procephalobus*, *Tricephalobus*, *Panagrodontus* with *P. armatus* n. sp., *Plectonchus* and *Macrolaimus* with *M. taurus* n. sp. and *M. hamatus* n. sp. The Cephalobinae includes *Cephalobus* with *C. parvus* n. sp., *Eucephalobus* with *E. laevis* n. sp. and *E. teres* n. sp. The Acrobelinae includes *Acrobeloides*, *Placodira* n. g. with *P. lobata* n. sp., *Chiloplacus* n. g., *Zeldia* n. g., *Cervidellus* n. g. with *C. hamatus* n. sp., *Stegella* n. g. with *S. incisa* n. sp., and *Acrobeles*. The Chambersiellinae includes *Chambersiella*. A list is given of species of doubtful position, species inquirendae and species nomen nudum.

T.G.

(47b) Thorne describes two new predaceous dorylaims belonging to the genus *Aporcelaimus* Thorne & Swanger, 1936, namely *A. pachydermus* n. sp. and *A. cobbi* n. sp., and gives a short account of the male of *A. vorax*. He renames *Tylencholaimus ensiculiferus* Cobb, 1893 *Xiphinema ensiculiferus* and shows that *Anguillula linea* Oken, 1815 should be placed in the genus *Xiphinema* as *X. linea*.

T.G.

(47c) In beetle-infested bark of *Pinus edulis* McBeth found examples of *Aphelenchoides penardi* (Steiner, 1914) which were apparently attacking and feeding on larvae of *Rhabditis obtusa*. An illustrated account is given of *A. penardi* which possesses a tuft of four sucker-like processes on the tip of the tail in both sexes.

T.G.

(47d) *Amphiuma tridactylum* is recorded as host for *Cephalogonimus amphiumae*, *Halipegus fusipora*, *Diplodiscus americanus* and *Telorchis amphiumae*, which Bennett & Re consider should be transferred to *Cercorchis*.

R.T.L.

(47e) *Allintoshius nycticeius* n. g., n. sp. is described from *Nycticeius humeralis* at Washington, D.C. The new genus belongs to the Ollulaninae and is closely related to *Bradypostrongylus* Price, 1928, differing in the spicules which are of a setaceous conoid form. The dorsal ray bears 2 pairs of small digitations instead of being cleft into 2 bifurcating branches.

R.T.L.

(47f) McIntosh describes *Athesmia wehri* n. sp. from *Pedioecetes phasianellus campestris*, and *Athesmia pricei* n. sp. from *Psophia viridis*.

E.M.S.

(47g) *Postharmostomum noveboracensis* n. sp. is described from a single specimen found in the intestine of *Tamias striatus lysteri*.

E.M.S.

(47h) Cram records that the Acridiid, *Scyllina cyanipes* (Fabr.), serves as an intermediate host of *Tetrameres americana*. Grasshoppers, collected at Mayaguez, Puerto Rico, were fed with nematode eggs; larvae developed, in the tissues of the insects, to the third stage which, when fed to incubator-hatched, laboratory-reared chicks, produced an infestation of the proventriculus with adult worms. Attempts to infect the insects, *Scapteriscus vicinus* and *Periplaneta australiana*, were unsuccessful.

J.N.O.

(47i) Price redescribes *Encotyllabe pagrosomi* MacCallum and *Acanthocotyle squatinæ* MacCallum. The latter is shown to belong to the genus *Trochopus* and becomes *Trochopus squatinæ* (MacCallum) new comb.

E.M.S.

(47j) Price describes *Tetraonchus alaskensis* n. sp. from the gills of *Salmo mykiss*, *Salvelinus malma spectabilis* and *Oncorhynchus kisutch*.

E.M.S.

(47k) A pure line strain of *Strongyloides ratti* derived originally from a single larva has been carried through 32 serial generations by single homogonic larva transfers in rats.

R.T.L.

(47l) Olsen describes *Dendrouterina nycticoracis* n. sp., a dilepid from *Nycticorax nycticorax* from Minnesota. It may be distinguished from other species of the genus by the presence of 18 hooks of two sizes. The testes number only 9 or 10 and the cirrus sac is long, reaching to the middle of the segment.

P.A.C.

(47m) Stoll records the infection of a five-month old calf with the sheep strain of *Moniezia expansa* contracted after exposure to an infested pasture for one day.

J.W.G.L.

(47o) Steiner gives short illustrated descriptions of the following:  
(i) *Tylenchorhynchus claytoni* n. sp., apparently parasitic in tobacco roots.  
(ii) *Rotylenchus blaberus* n. sp., causing diseases in yams originating from Nigeria. The new species closely resembles *Anguillulina bradys* but differs in certain small structural details.  
(iii) *Anguina spermophaga* n. sp., from young flowers of *Saccharum spontaneum*. This parasite is, structurally, close to the wheat gall eelworm, *Anguillulina tritici*.  
(iv) *Heterodera marioni* as a parasite in the scales of bulb of *Ornithogalum saundersiae* coming from South Africa.

T.G.

(47p) A more precise method of measuring the time required for expulsion of the caecal contents of chickens for use in anthelmintic work is described by Harwood. Chickens fed on a mash containing 1% by weight of *Lycopodium* spores showed an average count of 100.6 spores per 10 milligrams of caecal contents, while for those killed 48 hours later 4.6 spores, giving a 95% evacuation in the 2 days after cessation of spore feeding.

J.W.G.L.

#### 48—Proceedings of the Royal Society of Medicine.

- a. MANSON-BAHR, P. H., 1937.—“Comparative medicine in its relation to the study of tropical medicine.” 30 (3), 237-238.
- b. MORSON, A. C., 1937.—“Papillomata of both kidneys, ureters, and bladder due to bilharzial infection.” 30 (4), 451-452.
- c. GOTTLIEB, B., 1937.—“Cysticercosis.” 30 (5), 577-578.

#### 49—Puerto Rico Journal of Public Health and Tropical Medicine.

- a. RODRÍGUEZ-MOLINA, R. & HOFFMAN, W. A., 1937.—“The concomitance of *Endamoeba histolytica* and *Hymenolepis nana*.” 12 (3), 295-299. [Also in Spanish pp. 300-305.]
- b. KNOTT, J., 1937.—“Fever and Schistosomiasis mansoni. Report of two cases.” 12 (3), 306-309. [Also in Spanish pp. 310-313.]

## 50—Queensland Agricultural Journal.

- a. ROBERTS, F. S. H., 1937.—“Studies on the biology and control of the large roundworm of fowls, *Ascaridia galli* (Schränk 1788) Freeborn 1923.” 47 (1), 8-16.

(50a) In the concluding part of his study of *Ascaridia galli* Roberts considers methods for controlling and preventing infections. Among other methods he suggests the segregation of young chicks from adults and the rearing of them on concrete floors which can be easily disinfected. Overstocking of adult stock is to be avoided and the food ration should be adequate and balanced. Rotation of runs is good if it is possible. A summary of results of the earlier part of this study is also given. P.A.C.

## 51—Revue Suisse de Zoologie.

- a. JOYEUX, C. & BAER, J. G., 1937.—“Quelques helminthes nouveaux et peu connus de la musaraigne, *Crocidura russula* Herm. (Deuxième partie, Nématodes et Acanthocéphales).” 44 (1), 27-40.

(51a) Joyeux & Baer record the presence of the nematodes *Parastrongyloides winchessi* in the intestine, and *Capillaria splenaeca*, *C. soricicola*, *C. exigua*, *C. incassata* in the spleen, liver, stomach and bladder, respectively. The species of *Capillaria* are described and shown to have pronounced organic specificity. Larval Acanthocephala, referred on the size and number of rostral hooks to *Centrorhynchus appendiculatus*, were found encysted in the mesentery. E.M.S.

## 52—Revue de Zoologie et de Botanique Africaines.

- a. BERGHE, L. VAN DEN, 1937.—“Contribution à l'étude des parasites de l'okapi.” 29 (2), 141-150.

(52a) Two new nematodes are recorded from the okapi, viz., *Syngamus okapiæ* n. sp., which is most nearly related to *S. hippopotami*, and *Monodontella okapiæ* n. sp. for *M. giraffæ* Leiper 1935 nec *M. giraffæ* Yorke and Maplestone 1926. R.T.L.

## 53—Schweizerische Medizinische Wochenschrift.

- a. MAIER, C., 1937.—“Zur Kenntnis der Trichinose.” 67 (12), 248-250.

(53a) Maier is concerned with the clinical diagnosis of trichinellosis as illustrated by six clinical case-reports, together with a (possibly) non-trichinous case of polymyositis. B.G.P.

## 54—Science.

- a. TALIAFERRO, W. H. & SARLES, M. P., 1937.—“The mechanism of immunity to *Nippostrongylus muris*, the intestinal nematode of the rat.” [Abstract of a paper presented at the Chicago Meeting of the National Academy of Sciences. II.] 85 (2193), 49-50.
- b. THOMAS, L. J., 1937.—“A new source of *Diphyllbothrium* infection.” 85 (2196), 119.
- c. LINFORD, M. B., 1937.—“Stimulated activity of natural enemies of nematodes.” 85 (2196), 123-124.
- d. LINFORD, M. B. & OLIVEIRA, J. M., 1937.—“The feeding of hollow-spear nematodes on other nematodes.” 85 (2203), 295-297.

(54a) Taliaferro & Sarles believe that immunity in rats to *Nippostrongylus muris* is due to the presence of antibodies, partly because such actively acquired immunity can be passively transferred by serological means to non-immune rats, partly because of the intense inflammatory reaction shown by immune animals to invading larvae and also because of the stunted growth in those larvae which succeed in reaching the intestine. Increase in the number of eosinophiles and basophiles is usually associated with the presence of larvae in the skin and intestine. P.A.C.

(54b) A new *Diphyllbothrium* named *Sparganum browni* n. sp. is recorded from the intercostal muscles of a snake, *Natrix sipedon*, taken near Ithaca, N.Y. This snake is said to be a great fish-eater. R.T.L.

(54c) Over 20 species of nematode-destroying fungi have been recognized by Linford and his associates in Hawaii. Even in a plot in which 15 such fungi have been found *Heterodera marioni* is still securely established although less abundant than in some other pineapple fields. Although extermination of nematode infection is not to be expected, experiments have demonstrated the possibility of so increasing the activity of these fungi that they assume some practical significance in the control of plant parasitic nematodes. R.T.L.

(54d) Linford & Oliveira record observations on the predatory behaviour of various dorylaim nematodes and two species of *Aphelenchoides* which prey upon other nematodes. The predators are all inhabitants of Hawaiian soils but the actual observations on the insertion of the buccal spear into the victims, or their eggs and the sucking out of the contents, have been made on stiff agar media in Petri dishes. They have encountered amongst the predatory dorylaims 10 species of *Dorylaimus*, 2 of *Discolaimus* and 1 of *Actinolaimus*. One species of *Aphelenchoides* which is capable of attacking nematodes much larger than itself is *A. tenuicaudatus*; the other may be a new species, whilst both appear to be able to paralyse their prey quickly by the injection of a secretion from the oesophageal glands. T.G.

## 55—Semana Médica.

- a. LANDÍVAR, A. F., 1937.—“Doble quiste hidático del pulmón derecho. Operación de Arce. Curación.” 44 (1), 26-29.
- b. BACIGALUPO, J. & PASQUALINI, R. Q., 1937.—“Nuevo foco de anquilostomiasis en la provincia de Buenos Aires.” 44 (3), 198-201.
- c. BACIGALUPO, J. & LORETTI, G., 1937.—“La eritrosedimentación en la anquilostomiasis provocada por *Ancylostoma duodenale*.” 44 (4), 262-264.

## 56—South African Medical Journal.

- a. CAWSTON, F. G., 1937.—“Bilharzia disease in the Cape Province.” 11 (6), 208-209.

## 57—Taiwan Igakkai Zasshi.

- a. ABE, S., 1937.—“Development of *Wuchereria bancrofti* in the mosquito—*Culex quinquefasciatus*.” 36 (3), 483-515. [In Japanese: English summary pp. 516-519.]
- b. KAWAI, T., 1937.—“On the carbohydrate metabolic function of rabbits experimentally infected with *Clonorchis sinensis* at different periods of the infection.” 36 (3), 561-604. [In Japanese: English summary pp. 604-605.]

(57a) Abe contributes some new observations on the development of *Filaria bancrofti* in *Culex fatigans* (*quinquefasciatus*) in Formosa. The cycle is completed in 15 days at 25-28°C. Ecdysis occurs twice. The two nuclear columns of the microfilaria probably become the basis of the muscular layer. The origin of other organs from various cells in the microfilaria is also traced. No sex differentiation has taken place even when development in the mosquito is complete. R.T.L.

(57b) Fundamentally the decrease in the blood sugar, which occurs during the stage of jaundice in animals experimentally infected with *Clonorchis sinensis*, is due to the hypoglycaemic effect of an increased content of bile acids in the circulation while similar changes during the final stages are secondary to the pathological changes in the liver. No evidence of glycosuria was obtained. Definite functional disturbances, as shown by observations on the blood sugar curve and on the urine, manifested themselves at about the second week of the infection irrespective of its severity. R.T.L.

#### 58—Tierärztliche Rundschau.

- a. SEIDEL, 1937.—“Die wichtigsten Jungtierkrankheiten des Kaninchens, ihre Ursachen und Bekämpfung.” 43 (3), 35-38.
- b. BLIND, 1937.—“Spulwurmbefall der Welpen.” 43 (13), 217.

(58a) Seidel discusses the chief diseases of young rabbits and their control. His examination of 6,300 rabbits aged up to 6 months showed that 1.1% were infected with tapeworm cysts and 3.2% with intestinal parasites [apparently excluding coccidia, which are separately listed]: these are not dealt with in detail. B.G.P.

(58b) Blind briefly annotates a photograph of a six weeks old dog and the 101 ascarids passed after a single worm capsule. B.G.P.

#### 59—Tijdschrift voor Diergeneeskunde.

- a. BAUDET, E. A. R. F., 1937.—“Over enkele geneesmiddelen tegen ascari-diosis bij duiven.” 64 (3), 113-121. [English summary p. 121.]

(59a) After testing numerous anthelmintics against *Ascaridia columbae* in pigeons, Baudet was led to conclude that the most efficacious was chenopodium oil, and the second-best carbon tetrachloride. The doses were *Ol. chenopodii*: 0.5 c.c. or 0.25 c.c. of either a 25% or a 12.5% solution in *Ol. ricini*; *CCl<sub>4</sub>*: 0.5 c.c. or 0.25 c.c. The drugs were given in capsules, the great difficulty in treating pigeons being their tendency to vomit. None of the drugs were effective against *Capillaria*. B.G.P.

#### 60—Transactions of the American Microscopical Society.

- a. NOBLE, A. E. & NOBLE, G. A., 1937.—“*Accacladium nematulum* n. sp., a trematode from the sunfish *Mola mola*.” 56 (1), 55-60.
- b. RANKIN, jr., J. S. & HUGHES, R. C., 1937.—“Notes on *Diplostomulum ambystomae* n. sp.” 56 (1), 61-66.
- c. PARK, J. T., 1937.—“A new trematode, *Genitocotyle acirrus* gen. nov., sp. nov. (Allocreadiidae), from *Holconotus rhodoterus*.” 56 (1), 67-71.

- d. WEHR, E. E., 1937.—“Observations on the development of the poultry gapeworm *Syngamus trachea*.” 56 (1), 72-78.
- e. REID, W. M. & ACKERT, J. E., 1937.—“The cysticeroid of *Choanotaenia infundibulum* (Bloch) and the house fly as its host.” 56 (1), 99-104.
- f. FREEMAN, jr., A. E. & ACKERT, J. E., 1937.—“*Metorchis albidus*, a dog fluke new to North America.” 56 (1), 113-115.

(60b) A new agamodistome, named *Diplostomulum ambystomae* n. sp., occurs free in the body cavity of *Ambystoma opacum*. Only the most heavily infected salamanders appeared to be injured and these were somewhat bloated and sluggish. The coelomic fluid was milky and there was a peculiar granular substance in the intestines. The new form is described in detail and differentiated from *D. trituri*. R.T.L.

(60c) From the surf-perch, *Holcomotus rhodoterus*, a new trematode closely related to *Cymbophallus vulgaris* is described. It differs in the absence of a cirrus and cirrus sac and in the presence of a seminal receptacle and a Laurer's canal and on this account is made the type of a new genus *Genitocotyle*. The species is called *G. acirrus*. It may be necessary to revise the definition of the Allocreadiinae to include the new genus and others which lack cirrus and cirrus sac. R.T.L.

(60d) Wehr describes the development of *Syngamus trachea* in the egg, in earthworms and in chickens and gives an account of the later developmental stages in the definitive host. The embryo moults twice in the egg and hatches as a third stage larva which is infective either for earthworms or chickens. In the earthworm the third stage larva persists while in the chicken it proceeds to become an adult worm. The first moult occurs on the fifth day, the second moult on the seventh day in cultures at 24°C. to 30°C. Third stage larvae were recovered from the liver of a chick indicating that migration takes place by the blood stream. Young males and females become attached in permanent copulation in the lungs. R.T.L.

(60e) Reid & Ackert confirm that cysticeroids of *Choanotaenia infundibulum* occur in the body cavity of the house fly and have secured experimental evidence that they develop into adults in chickens. The cysticeroid is described and illustrated. The house fly may possibly serve also as an intermediate host for *Railletina cesticillus*. R.T.L.

(60f) The occurrence of *Metorchis albidus* in an Eskimo husky dog at Los Angeles, California, is reported. The specimens which are described and illustrated are approximately twice the size of those of this species which have been found in Europe. R.T.L.

## 61—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. GEBERT, S., 1937.—“Notes on filariasis and its transmission by Mauritian anophelines.” 30 (4), 477-480.
- b. STRONG, R. P., 1937.—“Onchocerciasis in Central America and Africa.” [Royal Society of Tropical Medicine and Hygiene Chadwick Lecture.] 30 (5), 487-506.
- c. HINMAN, E. H., 1937.—“A study of eighty-five cases of *Strongyloides stercoralis* infection, with special reference to abdominal pain.” 30 (5), 531-538.

(61a) *Filaria bancrofti* occurs throughout the island of Mauritius. In addition to *Culex fatigans*, already implicated, Gebert shows that *Anopheles costalis*, *A. funestus* and *A. maculipalpis* are capable of acting as vectors while *A. mauritianus* is resistant. R.T.L.

(61b) In this address Strong summarizes his recent work on onchocerciasis in man in Central America and in Africa. R.T.L.

## 62—Tropical Agriculture.

- a. METIVIER, H. V. M., 1937.—“Some important parasites of sheep from British Guiana.” 14 (1), 4.

(62a) Metivier records *Haemonchus contortus*, *Trichostrongylus instabilis*, *Monodontus trigonocephalus* and *Oesophagostomum columbianum* from the intestine of a sheep obtained from the Rupununi District of British Guiana. D.O.M.

## 63—Tropical Diseases Bulletin.

- a. LANE, C., 1937.—“Hookworm anaemia. An outline in Basic of present knowledge and opinion.” 34 (1), 1-14.

(63a) Lane considers that for patients suffering from hookworm anaemia, an anthelmintic is the first step in treatment, unless weakness or other conditions make this inadvisable. When the parasites have been removed iron can be administered to make up the deficiency. Iron therapy alone cannot be satisfactory if parasites are still present and by their extraction of blood are increasing the anaemia. P.A.C.

## 64—Veterinary Journal.

- a. WALKER, T., 1937.—“A preliminary report on the helminthic parasites of poultry, wild birds and small mammals in the South Wales area.” 93 (1), 28-31.

## 65—Veterinary Record.

- a. TAYLOR, E. L., 1937.—“The revelation of the life-history of the liver fluke as an illustration of the process of scientific discovery.” 49 (3), 53-58.

## 66—Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening.

- a. BOVIEN, P., 1937.—“Some types of association between nematodes and insects.” 101, 1-114.

(66a) Bovien has made observations on some types of association between insects and various genera of the Anguillulidae. After a general survey of the literature the author discusses a number of species. *Diplogaster stercorearius* n. sp. and *D. magnibucca* n. sp., from cattle faeces, were both found to possess a special resting stage (the “Dauerlarve” of Fuchs) which occurred in variable numbers under the elytra of all dung beetles (*Aphodius* spp.)

examined. The second species is predatory, attacking and devouring other nematodes. Two other undetermined species of *Diplogaster*, from decaying cabbages, each had a "Dauer" stage attached to the exoskeleton of Staphylinid beetles and their larvae, present in or near the plants. *Diplogaster aphodii* n. sp. and *D. secundus* n. sp. occurred as endoparasitic larvae in adult and larval *Aphodius fimetarius* and adult *Aphodius* spp.; 5 to 70% of beetles examined were infested during all months of the year with the former parasite, which occurred in the body cavity and often between the thoracic muscles.

*Heterotylenchus aberrans* n. g., n. sp. was found in the Onion fly, *Hylemyia antiqua* at Lyngby, Denmark in 1932. Parasitism varied from 9 to 25% and was equally high in both sexes of the insect in which the fat tissue was reduced and sterility produced, with few exceptions, in the female fly; in the male the testes were not invaded. The parasite exhibits an alternation of sexual and parthenogenetic generations. The fertilized female invades the fly larva and develops into a gravid, sausage-shaped form which, in the adult fly, produces eggs that give rise to parthenogenetic females only; these remain throughout their life in the fly producing eggs from which larvae develop, invade the ovaries, assemble in the oviduct and escape, via the genital opening, to become free-living sexual adults. The author considers that the production of thousands of larvae by the parthenogenetic female in the fly's body cavity compensates for the low fertility of the sexual generation. A diagnosis of the new genus is given.

*Aphelenchulus tomic* n. sp. was found in the body cavity of about 60% of larvae and about 30% of adults of the bark beetle, *Tomicus bidens*; the author assigns the parasite to the "contortus-group" of Fuchs. Additional morphological information on *Allantonema mirabile*, found in the body cavity of 5 to 10% of *Hylobius abietis* examined, is given as well as further notes on the biology of *Bradynema rigidum* which was found in *Aphodius fimetarius* and in which the incidence of infection varied from 0 to 35% in samples from the same district. 50% of Psychodidae examined were found infected with *Rhabditis dubia* n. sp. which occurred, as "Dauer" larvae, coiled in tightly-fitting rings around the intersegmental furrows of the fly's abdomen. Mention is made of *Rhabditis coarctata*. *Cheilobus quadrilabiatus*, taken from decaying cabbages at Lyngby in 1934, also possesses a "Dauer" stage which appears to be facultative and was found, coiled like a watch-spring, attached by means of a peduncle consisting of coagulated secretion to the exoskeleton of larval and adult Staphylinid beetles. This nematode was cultivated on agar plates.

During 1931-35, in practically all samples of larvae of *Bibio ferruginatus*, *B. hortulanus* and *Dilophus vulgaris* were found specimens of *Neoaplectana bibionis* n. sp. and *N. affinis* n. sp. which show a combination of saprozoic and parasitic characters. The gravid female worms, at first oviparous, later become viviparous, producing large numbers of larvae; in some cases these larvae may develop normally, with fatal results to the host, but under unfavourable nutritional conditions there is intercalated a "Dauer" stage which does not normally kill the fly larva and remains alive in

the host's intestine without further development. If the host be killed, however, the "Dauer" larvae penetrate into the body cavity, become adult and rapidly multiply. "Dauer" larvae were sometimes seen clinging to the exoskeleton of *Bibio* flies which were used as a means of transport to spread infection. The adult females of the two species were not morphologically distinguishable but the males were distinct as were the "Dauer" larvae which were reared through several generations in the case of *N. bibionis* (although *N. affinis* seldom produced more than one) on egg-albumen to which was added a small piece of insect tissue.

Morphological descriptions of the adults and many of the larval stages of the new species mentioned in this paper are given, together with notes on their bionomics and affinities. There is a concluding chapter in which the author discusses the various types of associations that have come under his notice.

J.N.O.

#### 67—Zeitschrift für Fleisch- und Milchhygiene.

- a. DINTER, 1937.—Zur Durchführung des Runderlasses, betr. Bekämpfung der Finnenkrankheit der Rinder." 47 (9), 173.
- b. LERCHE, 1937.—"Das Tier als Lebensmittel in seiner Bedeutung für Volkswirtschaft, Volksernährung und Volksgesundheit." 47 (9), 180-185.
- c. KOLBE, F., 1937.—"Neueres über die Trichine. III. Sammelreferat." 47 (7), 137-140; (10), 198-200.

(67a) Dinter questions the practicability of a new German Act designed to control cysticerciasis in cattle by treating human carriers on infested farms. Farm labour is often casual, and the carriers can seldom be traced. He proposes a scheme for distributing forms, through pharmacists, to all who apply for tapeworm remedies. The form advertises the premium of 5 RM. paid for each complete tapeworm sent in, and is to be certified by the medical practitioner and returned to the Ministry of Health. Pharmacists return to the local M.O.H. the number of forms issued.

B.G.P.

(67b) In the course of his address on the nutritional and economic significance of food animals, of which this is the second part, Lerche also refers to the recent Act aimed at controlling cysticerciasis in cattle [see previous abstract]. His criticism is that infected persons should be compelled to have medical advice and not be allowed to purchase anthelmintics without a prescription, as at present.

B.G.P.

(67c) Kolbe reviews the most recent work on *Trichinella*. His previous review appeared in the same periodical in 1935 [see *Helm. Abs.*, Vol. IV, No. 318a].

B.G.P.

#### 68—Zeitschrift für Hygiene und Infektionskrankheiten.

- a. BRUNS, H., 1937.—"Über *Anguillula (Strongyloides) intestinalis*." 119 (3), 336-351.

(68a) Strongyloidiasis is present in about 0.2% of miners from western Germany, as compared with 1% in the first decade of this century. Bruns

regards the disease as less important to miners than hookworm, less amenable to anthelmintic treatment, but more readily controlled by measures directed against the larvae. He discusses larval resistance to various high and low temperatures, and to various common acids, alkalis and disinfectants, concluding that the larvae are much less resistant than those of hookworm.

B.G.P.

### 69—Zeitschrift für Parasitenkunde.

- a. GRIEDER H., 1937.—“In der Schweiz selten vorkommende Helminthen als pathogene Wirbeltierparasiten.” 9 (2), 145-150.
- b. WILDE, J., 1937.—“*Dactylogyrus macracanthus* Wegener als Krankheits-erreger auf den Kiemen der Schleie (*Tinca tinca* L.). (Die Anatomie, Entwicklungsgeschichte, Biologie des Parasiten, die Reaktionen des Wirtstieres und die Methoden zur Bekämpfung der Krankheit).” 9 (2), 203-236.
- c. HEINEMANN, E., 1937.—“Über den Entwicklungskreislauf der Trematodengattung *Metorchis* sowie Bemerkungen zur Systematik dieser Gattung.” 9 (2), 237-260.
- d. MÄDER, E., 1937.—“*Ena obscura*, ein weiterer Zwischenwirt des Lanzettegels *Dicrocoelium lanceatum*.” 9 (2), 261-262.

(69a) Grieder writes on (i) *Triaenophorus nodulosus* heavily infesting *Coregonus wartmanni*, (ii) *Porocephalus clavatus* causing a purulent bronchial pneumonia in a *Boa constrictor* imported from South America, and (iii) *Pseudamphistomum truncatum* causing severe induration of the liver and cholangitis, leading to death, in a silver fox.

B.G.P.

(69b) Wilde gives a detailed, illustrated redescription of *Dactylogyrus macracanthus*, parasitic on the gills of tench, and fully discusses the life-history, biology, host-reactions, and methods of control. The parasite destroys the epithelial, connective and cartilaginous tissues of the gills, and ruptures blood vessels. As the life-history is direct, control methods are mainly based on isolating uninfected tench for breeding.

B.G.P.

(69c) Heinemann describes the structure and life-history of *Metorchis intermedius* n. sp. Cercariae like those of *Opisthorchis felineus* were shed from a *Bithynia tentaculata*, and the metacercaria was successfully reared in *Cobitis taenia*. After feeding metacercariae to two ducks and a cat, adults were recovered from the gall bladder and bile duct of a duck. All stages of the parasite are figured. Heinemann regards *Metorchis* phylogenetically as a young genus in which the various species are not yet sharply differentiated.

B.G.P.

### 70—Zentralblatt für Bakteriologie. Abteilung I. Originale.

- a. VOGEL, H., 1937.—“Beobachtungen über die Lebensgeschichte von *Opisthorchis felineus* in Ostpreussen.” 138 (3/4), 250-254.
- b. KREIS, H. A., 1937.—“Die Entwicklung der Trichinellen zum reifen Geschlechtstier im Darne des Wirtes.” 138 (5/6), 290-302.
- c. KREIS, H. A., 1937.—“Beiträge zur Kenntnis parasitischer Nematoden. IV. Neue und wenig bekannte parasitische Nematoden.” 138 (7/8), 487-500.

(70a) Vogel's examination of *Bithynia leachi*, from two endemic centres of opisthorchiasis in East Prussia, for natural infections revealed an incidence

of 0.3% among 723 molluscs from Karkeln and 1.7% among 231 from Inse. This is the only mollusc serving as an intermediary in this area. Infested tench show small rings of pigmentation on the fins. Cats are the important reservoir hosts. B.G.P.

(70b) Kreis describes the development of *Trichinella* from the release of the encysted larvae in the stomach to the sexually mature adults in the intestines of the host, using rats as experimental material. He concludes that the larvae are released from the cysts not only by the action of the gastric juice, but probably also as a result of secretory activity by the larvae themselves within the cysts. Measurements show that the female develops faster than the male, the sexes being distinguished after 18 hours when the posterior papillae of the male are evident. Differences in the ratio of the body length to the distance between the posterior end of the gonad and the posterior end of the body differentiate the sexes even in the encysted larvae. The female probably moults four times during development; after 2 to 8 hours, after 12 to 16 hours, following copulation after 48 hours, and after 72 hours. The male, on the contrary, besides two moults in the asexual stage, appears to moult once more only, after 20 hours. V.D.S.

(70c) Kreis describes and figures the following nematodes collected by a Swiss expedition to Angola: *Oxyuris sciuri* Hall (? females only) in *Georchus* sp., *Contracaecum pseudodontum* n. sp. in *Phalacrocorax* sp., *C. fuhrmanni* n. sp. in *Plotus levaillandi*, *Gongylonema* sp. (female only) in *Funisciurus annulatus*, and *Rictularia magna* n. sp. and *Protospirura oligodonta* n. sp., both from *Mus* sp. B.G.P.